



UNIVERSITY OF HAWAII

**CANCER CENTER**

Thoracic Oncology Seminar

**"IP3 receptor/Ca<sup>2+</sup> signaling: its role in health and disease"**

Monday, June 18, 2018

12:00 p.m.



**Katsuhiko Mikoshiba, M.D., Ph.D.**

Chief Scientist and Team Leader  
Laboratory for Developmental Neurobiology  
RIKEN Center for Brain Science  
Wako, Saitama, Japan

**University of Hawaii Cancer Center**

701 Ilalo Street  
(Sullivan Conference Center)

*Light refreshments to follow*

## CURRICULUM VITAE

Name: Katsuhiko Mikoshiba

Present Address: Team Leader, Laboratory for Developmental Neurobiology  
CBS (Center for Brain Science), RIKEN  
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Education: 1969 M.D. Keio University School of Medicine  
1973 Ph.D. (Dr. of Medical Science), Keio University

### Professional Training and Employment:

1973-1974 Instructor, Department of Physiology,  
Keio University School of Medicine

1974-1982 Assistant Professor, Department of Physiology,  
Keio University School of Medicine

1976-1977 Research Associate  
Pasteur Institute, Paris, France (c/o Dr. Jean-Pierre Changeux)

1982-1985 Associate Professor, Department of Physiology,  
Keio University School of Medicine

1985-1992 Professor, Division of Regulation of Macromolecular  
Function, Institute for Protein Research, Osaka University

1986-1991 Professor, Division of Behavior and Neurobiology,  
National Institute for Basic Biology (Adjunct position)

1992-1997 Chief Scientist, Molecular Neurobiology Laboratory,  
The Institute of Physical and Chemical Research (RIKEN),  
Tsukuba Life Science Center (Adjunct position)

1992-2007 Professor, Department of Molecular Neurobiology,  
The Institute of Medical Science, The University of Tokyo

1995-2000 Project Leader, Mikoshiba Calciosignal Net Project,  
Exploratory Research for Advanced Technology (ERATO),  
Japan Science and Technology Corporation (JST)

1997-2009 Team Leader, Laboratory for Developmental Neurobiology,  
Group Director, Neuro-Development Disorder Research Group,  
Brain Science Institute, RIKEN

2001-2005 Research Director, The International Cooperative Research  
Project (calcium oscillation project)  
Japan Science and Technology Agency (JST)

2003-2015 Foreign Professor (Adjunct Professor) at Karolinska Institute

2004-Present Adjunct Professor at Jikeikai Medical School,  
Yamagata University

2005-Present Member of Science Council of Japan

2006-2011 Research Director, Solution Oriented Research for Science  
and Technology (calcium oscillation project) Japan Science and  
Technology Agency (JST)

2007-Present Professor Emeritus of University of Tokyo

2008-2011 Foreign Professor (WCU, World Class University Professor) of

	Seoul National University (Korea)
2009- Present	Senior Team Leader, Laboratory for Developmental Neurobiology, Brain Science Institute, RIKEN
2010- Present	Adjunct Professor at Keio University School of Medicine

### Honors:

1974	Erwin von Bälz Preis
1980	Kitazato Prize
1987	Inoue Scientific Prize
1987	The 1st Memorial Prize for Tsukahara Nakaakira (with Prof. Nobutaka Hirokawa)
1991	Osaka Prize for Science
1996	Medical Award of the Japan Medical Association
1996	Human Frontier Science Program Grant Award (1996-98)
1997	Uehara Prize (with Prof. Shigekazu Nagata)
1998	The Keio Medical Science Prize (International Prize) with Dr. M.J. Folkman
1999	Human Frontier Science Program Grant Award (1999-01)
1999	The Fritz-Lipmann Lecture Award (Germany)
2000	College de France Medal (France)
2002	Medal of Honor in Japan (Medal with Purple Ribbon-Emperor's Prize)
2003	Klaus Joachim Zülch -Preis (Germany • Max-Planck Institute, Gertrud Reemtsma Foundation) with Professor Fred H. Gage (Salk Institute)
2003	Foreign Professor at Karolinska Institute (Adjunct Professor), (Sweden)
2004	Takeda Medical Science Prize (Takeda Foundation, Japan)
2005	Meister Prize (Endocrinology Society for Japan)
2006	Nobel Forum Lecture (Karolinska Institute, Sweden)
2007	Hagiwara Lecture (The Physiological Society of Japan)
2008	Sherrington Lecture (Liverpool, UK)
2009	The Naito Foundation Research Prize
2009	Japan Academy Prize
2010	Honorary Membership of the Japanese Biochemical Society
2011	Honorary Doctorate at Karolinska Institutet (Medical Doctor) (Sweden)
2012	Honorary Membership of the European Calcium Society
2013	Martin Rodbell Memorial Lecture (NIH-NIEHS, USA)
2013	Special Award from the International Society for antioxidant
2013	Légion d' Honneur (Chevalier) from the Republic of France
2014	George and Catherine Weber Special Symposium Lecture (Bologna, Italy)

### **Editorial Board Membership:**

1. Science {Science's STKE (Signal Transduction Knowledge Environment) Perspective (Web publication) (American Association for the advancement of Science) (1999 - 2008) Science Signaling (from 2008 -2017)
2. Molecular Neurobiology (Humana Press) (1999 - )
3. Fundamental & Clinical Pharmacology (Elsevier) (1999 - )
4. Journal of General Physiology (American Physiological Society) (1996 -2008 )
5. Methods: A Companion to Methods in Enzymology (Academic Press) (1995 - 1999)
6. Glia (Academic Press) (1994 – 1999)
7. Molecular and Cellular Neuroscience (MCN) (Academic Press) (1994 - )
8. Protein Profile (Academic Press) (1994 - 1998 )
9. Neuron (Cell Press) (1993 - 1994)
10. Journal of Neurochemistry (Raven Press) (1993 -2003 )
11. Receptors and Channels (Chief Editor of Asia & Australia Region (Harwood Academic Publishers GMBH) (1992 - )
12. NeuroProtocols (Academic Press) (1992 – 1996)
13. Journal of Neuroscience Research (Wiley-Liss) (1992 - )
14. Brain Dysfunction (S.Karger, Medical and Scientific Publishers) (1991- 1999)
15. Neuroscience Research (Elsevier) (Section Editor, Molecular Neuroscience) (1990 - )
16. Cell Structure and Function (Japan Society for Cell Biology)
17. Cellular and Molecular Neurobiology (Plenum Publishing Corporation) (1989-)
18. Development, Growth and Differentiation (Academic Press) (1984-)
19. Developmental Neuroscience (S.Karger, Medical and Scientific Publishers) (1983 -1989)
20. Neuro signals (Karger) (1999-)
21. Cell Calcium (Elsevier) (2006-)

### **Academic Activities:**

1. Council Member, International Society for Neurochemistry (1998-2004)
2. Council Member, International Committee on Second Messengers and Phosphoproteins (1997- )
3. Council Member, International Symposium on Calcium Binding Proteins and Calcium Function in Health and Disease (1997- )
4. Chairman, International Symposium on Calcium Binding Proteins and Calcium Function in Health and Disease (1999)
5. Council Member of Asia Pacific Region of IBRO (International Brain Research Organization) (1999-2001)
6. Council Member of Asian Pacific Society for Neuroscience (2000-2006)
7. Full Member, International Society of Developmental Biologists
8. Full Member, Society for Neuroscience
9. Member of Program Committee, Society for Neuroscience
10. Full Member, International Brain Research Organization
11. Full Member, Society for Developmental Neuroscience
12. Board of Director, International Society of Differentiation (1999- ) Japanese Society

13. Council Member, Japanese Neuroscience Society (1987-1989, 1992-1995, 1995-1998, 1998-)
14. Council Member, Japanese Society of Cell Biology (1993-1994, 1996-1998, 1998-2000)
15. Council Member, Physiological Society of Japan (1999-2004, 2010-)
16. • President, Japanese Society for Neurochemistry (2000-2002, 2002-2004 )  
Council Member, Japanese Society for Neurochemistry (1986-1989, 1992-1995, .1996-1998,2001-2004)
17. • Chairman of the Selection Committee for the research grant candidate, Japanese Society for Neurochemistry (1997-1999)  
• Chairman of the Committee for the International Affairs, Japanese Society for Neurochemistry (1999-2000, 2001-2005)  
• President, The 41<sup>st</sup> Annual Meeting of the Japanese Society for Neurochemistry (1998)
18. Council Member, Molecular Biology Society of Japan (2000-2005)
19. Council Member, Japan Intractable Diseases Research Foundation (1996- )
20. Council Member, Japanese Society for Regenerative Medicine (2001-2005)
21. Executive Council Member, Japanese Biochemical Society (1994-1996) (2002-2004)
22. Council Member, Center for Academic Societies Japan (1999-2004)
23. Council Member, Center for Academic Journals in Japan (1997-2004)
24. Full Member, Japanese Society of Developmental Biologists
25. Full Member, Japanese Association of Anatomists
26. Full Member, Japanese Association for Neuroethology
27. Full Member, Research Group of Information Biology
28. Council Member, Japan Foundation for Neuroscience and Mental Health (2007- )
29. Council Member, Japan Foundation for Applied Enzymology (1989- )
30. President of Association Pasteur Japon (NPO) (2011-2014)
31. Member for the IUPS General Assembly (2012- )

#### **Foundation member for selection of the Prize:**

1. Committee Member, Selection Committee of **Uehara Prize** at Uehara Memorial Foundation (1998-2012)
2. Committee Member, Selection Committee of “**International Prize for Biology**,” Japan Society for the Promotion of Science (1989)
3. Committee Member, Selection Committee of “**Kyoto Prize**,” Inamori Foundation (1986), (1996), (2000)
4. Committee Member, Selection Committee of “**Japan Prize**,” Science and Technology Foundation of Japan (1992), (1996)
5. Committee Member, Selection Committee The “**Teiichi Yamazaki Prize**”, Foundation for Promotion of Material Science and Technology of Japan (2003- )
6. Program Committee Member of Society for Neuroscience (North America) (2009-2011)
7. President of Selection Committee of “**Takeda grant support**” by Takeda Foundation

## **REVIEW COMMITTEE:**

1. Review Committee Member, Mitsubishi Biochemical Institute of Life Sciences
2. Review Committee Member, Niigata University
3. Review Committee Member, Kumamoto University
4. Review Committee Member, Hamamatsu Medical School
5. Review Committee Member, Tokyo Metropolitan Institute
6. Scientific Advisory Board of **Center of Advanced European Studies and Research** at Max Plank Society, Germany (2009-2015)

## **REMARKS:**

Appeared in the 'Who's Who in the World,' MARQUIS WHO'S WHO Vol.15 (1997- )

Appeared in the 'Who's Who in the 21<sup>st</sup> Century' 1<sup>st</sup> Edition (International Biographical Centre, Cambridge, England)

Man of the Year 2000 (American Biographical Institute, USA)

Intellectuals of 20<sup>th</sup> Century (in the field of Neuroscience) (International Biographical Centre Cambridge, UK)  
-2008 )

## Main publications (Mikoshiha Laboratory)

1. Mikoshiha, K., Yokoyama, M., Inoue, Y., Takamatsu, K., Tsukada, Y. & Nomura, T.: Oligodendrocyte abnormalities in shiverer mouse mutant are determined in primary chimaeras. **Nature** 299 357-359 (1982)
2. Furuichi, T., Yoshikawa, S., Miyawaki, A., Wada, K., Maeda, N. & Mikoshiha, K.: Primary structure and functional expression of the inositol 1,4,5-trisphosphate-binding protein P400. **Nature** 342 32-38 (1989)
3. Miyawaki, A., Furuichi, T., Maeda, N. & Mikoshiha, K.: Expressed cerebellar-type inositol 1,4,5-trisphosphate receptor, P400 has calcium release activity in a fibroblast L cell line. **Neuron** 5 11-18 (1990)
4. Mori, Y., Friedrich, T., Kim, M.S., Mikami, A., Nakai, J., Ruth, P., Bosse, E., Hofman, F., Flockerzi, V., Furuichi, T., Mikoshiha, K., Imoto, K., Tanabe, T. & Numa, S.: Primary structure and functional expression from complementary DNA of a brain calcium channel. **Nature** 350 398-402 (1991)
5. Turnley, A.M., Morahan, G., Okano, H., Bernard, O., Mikoshiha, K., Allison, J., Bartlett, P.F. & Miller, J.F.A.P.: Dysmyelination in transgenic mice resulting from expression of class I histocompatibility molecules in oligodendrocytes. **Nature** 353 566-69 (1991)
6. Miyazaki, S., Yuzaki, M., Nakada, K., Shirakawa, H., Nakanishi, S., Nakade, S. & Mikoshiha, K.: Block of  $Ca^{2+}$  wave and  $Ca^{2+}$  oscillation by antibody to the inositol 1,4,5-trisphosphate receptor in fertilized hamster eggs. **Science** 257 251-255 (1992)
7. Kuwajima, G., Futatsugi, A., Niinobe, M., Nakanishi, S. & Mikoshiha, K.: Two types of ryanodine receptors in mouse brain: Skeletal muscle type exclusively in Purkinje cells and cardiac muscle type in various neurons. **Neuron** 9 1133-42 (1992)
8. Fujita, Y., Mynlieff, M., Dirksen, R.T., Kim, M.S., Niidome, T., Nakai, J., Friedrich, T., Iwabe, N., Miyata, T., Furuichi, T., Furutama, D., Mikoshiha, K., Mori, Y. & Beam, K.G.: Primary structure and functional expression of the  $\omega$ -conotoxin-sensitive N-type calcium channel from rabbit brain. **Neuron** 10 585-598 (1993)
9. Kume, S., Muto, A., Aruga, J., Nakagawa, T., Michikawa, T., Furuichi, T., Nakade, S., Okano, H. & Mikoshiha, K.: The *Xenopus*  $IP_3$  receptor: structure, function, and localization in oocytes and eggs. **Cell** 73 555-570 (1993)
10. Kawasaki, M., Uchida, S., Monkawa, T., Miyawaki, A., Mikoshiha, K., Marumo, F., & Sasaki, S.: Cloning and expression of a protein kinase C-regulated chloride channel abundantly expressed in rat brain neuronal cells. **Neuron** 12 597-604 (1994)
11. Kagawa, T., Ikenaka, K., Inoue, Y., Kuriyama, S., Tsujii, T., Nakao, J., Nakajima, K., Aruga, J., Okano, H. & Mikoshiha, K.: Glial cell degeneration and hypomyelination caused by overexpression of myelin proteolipid protein gene. **Neuron** 13 427-442 (1994)
12. Ogawa, M., Miyata, T., Nakajima, K., Yagy, K., Seike, M., Ikenaka, K., Yamamoto, H. & Mikoshiha, K.: The reeler gene-associated antigen on Cajal-Retzius neurons is a crucial molecule for laminar organization of cortical neurons. **Neuron** 14 899-912 (1995)

13. Matsumoto, M., Nakagawa, T., Inoue, T., Nagata, E., Tanaka, K., Takano, H., Minowa, O., Kuno, J., Sakakibara, S., Yamada, M., Yoneshima, H., Miyawaki, A., Fukuuchi, Y., Furuichi, T., Okano, H., Mikoshiba, K. & Noda, T.: Ataxia and epileptic seizures in mice lacking type 1 inositol 1,4,5-trisphosphate receptor. **Nature** 379 168-171 (1996) K. Mikoshiba: corresponding author
14. Del Rio, J.A., Heimrich, B., Borrell, V., Forster, E., Drakew, A., Alcantara, S., Nakajima, K., Miyata, T., Ogawa, M., Mikoshiba, K., Derer, P., Frotscher, M. & Soriano, E.: A role for Cajal-Retzius cells and reelin in the development of hippocampal connections. **Nature** 385 70-74 (1997)
15. Umemori, H., Inoue, T., Kume, S., Sekiyama, N., Nagao, M., Itoh, H., Nakanishi, S., Mikoshiba, K. & Yamamoto, T.: Activation of the G protein Gq/11 through tyrosine phosphorylation of the  $\alpha$  subunit. **Science** 276 1878-1882 (1997)
16. Sheldon, M., Rice, S.D., D' Arcangelo, G., Yoneshima, H., Nakajima, K. & Mikoshiba, K., & Howell, W.B., Cooper, A.J., Goldowitz, D., & Curran, T.: Scrambler and yotari disrupt the disabled gene and produce a reeler-like phenotype in mice. **Nature** 389 730-733 (1997)
17. Kume, S., Muto, A., Inoue, T., Suga, K., Okano, H. & Mikoshiba, K.: Role of inositol 1,4,5-trisphosphate receptor in ventral signaling in *Xenopus* embryos. **Science** 278 1940-43 (1997)
18. Zhao, H., Ivic, L., Otaki, J.M., Hashimoto, M., Mikoshiba, K., & Firestein, S.: Functional expression of a mammalian odorant receptor. **Science** 279 237-242 (1998)
19. Takei, K., Shin, R.-M., Inoue, T., Kato, K. & Mikoshiba, K.: Regulation of nerve growth mediated by inositol 1,4,5-trisphosphate receptor in growth cones. **Science** 282 1705-708 (1998)
20. Michikawa, T., Hirota, J., Kawano, S., Hiraoka, M., Yamada, M., Furuichi, T. & Mikoshiba, K.: Calmodulin mediates calcium-dependent inactivation of the cerebellar type 1 inositol 1,4,5-trisphosphate receptor. **Neuron** 23 799-808 (1999)
21. Futatsugi, A., Kato, K., Ogura, H., Li, S-T., Nagata, E., Kuwajima, G., Tanaka, T., Itohara, S. & Mikoshiba, K.: Facilitation of NMDA receptor-independent LTP and spatial learning in mutant mice lacking Ryanodine receptor type 3. **Neuron** 24 701-713 (1999)
22. Ma, H.T., Patterson, R.L., van Rossum, D.B., Birnbaumer, L., Mikoshiba, K. & Gill, D.L.: Requirement of the inositol trisphosphate receptor for activation of store-operated  $Ca^{2+}$  channels. **Science** 287 1647-1651 (2000)
23. Mikoshiba, K. & Hattori, M.: IP3Receptor-operated calcium Entry. **Science STKE**{Science's stke (Signal Transduction Knowledge Environment) Perspective (Web publication)} 1-4 (2000)
24. Nishiyama, M., Hong, K., Mikoshiba, K., Poo, M. & Kato, K.: Calcium stores regulate the polarity and input specificity of synaptic modification. **Nature** 408 584-588 (2000)
25. Fukami, K., Nakao, K., Inoue, T., Kataoka, Y., Kurokawa, M., Fissore, R. A., Nakamura, K., Katsuki, M., Mikoshiba, K., Yoshida, N. & Takenawa, T.: Requirement of phospholipase C $\delta$ 4 for the *Zona pellucida*-induced acrosome reaction. **Science** 292 920-923 (2001)



26. Nagai, T., Ibata, K., Park, ES., Kubota, M., Mikoshiba, K. & Miyawaki, A.: A variant of yellow fluorescent protein with fast and efficient maturation for cell-biological applications. **Nature Biotechnol.** 20 87-90 (2002)
27. Saneyoshi, T., Kume, S., Amasaki, Y. & Mikoshiba, K.: The Wnt/Calcium pathway activates NF-AT and promotes ventral cell fate in *Xenopus* embryos. **Nature** 417 295-299 (2002)
28. Bosanac, I., Alattia, J. R., Mal, T. K., Chan, J., Talarico, S., Tong, F. K., Tong, K. I., Yoshikawa, F., Furuichi, T., Iwai, M., Michikawa, T., Mikoshiba, K. & Ikura, M.: Structure of the inositol 1, 4, 5-trisphosphate receptor binding core in complex with IP<sub>3</sub>. **Nature** 420 696-700 (2002)
29. Herrera, E., Brown, L., Aruga, J., Rachel, R.A., Dolen, G., Mikoshiba, K, Brown, S. & Mason, C.A.: *Zic2* patterns binocular vision by specifying the uncrossed retinal projection. **Cell** 114 545-557 (2003)
30. Higo, T., Hattori, M., Nakamura, T., Natsume, T., Michikawa, T & Mikoshiba, K.: Subtype-specific and ER-luminal-environment-dependent Regulation of Inositol 1,4,5-Trisphosphate Receptor Type 1 by ERp44. **Cell** 120:85-98 (2005)
31. Bosanac, I., Yamazaki, H., Matsu-ura, T., Michikawa, T., Mikoshiba, K. & Ikura, M.: Crystal structure of the ligand binding suppressor domain of type 1 inositol 1,4,5-trisphosphate receptor. **Molecular Cell** 17:193-203 (2005)
32. Futatsugi, A., Nakamura, T., Yamada, M. K.,Ebisui, E., Nakamura, K., Uchida, K., Kitaguchi, T., Takahashi-Iwanaga, H., Noda, T., Aruga, J. & Mikoshiba, K.: IP<sub>3</sub> Receptor Types 2 and 3 mediate exocrine secretion underlying energy metabolism. **Science** 309:2232-2234 (2005)
33. Hisatsune, C., & Mikoshiba, K.: Novel compartment implicated in calcium signalig—Is it an “Induced coupling domain”? **Science STKE** 2005(13) pe53 (2005)
34. Ando, H., Mizutani, A., Kiefer, H., Tsuzurugi, D., Michikawa, T. & Mikoshiba, K. : IRBIT suppresses IP<sub>3</sub> receptor activity by competing with IP<sub>3</sub> for the common binding site on IP<sub>3</sub> receptor in a phosphorylation-dependent manner. **Molecular Cell** 22:795-806 (2006)
35. Higazi DR, Fearnley CJ, Drawnel FM, Talasila A, Corps EM, Ritter O, McDonald F, Mikoshiba K, Bootman MD, Roderick HL Endothelin-1-stimulated InsP3-induced Ca<sup>2+</sup> release is a nexus for hypertrophic signaling in cardiac myocytes. **Molecular Cell** 33(4): 472-82 (2009)
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37. Akiyama H, Matsu-ura T, Mikoshiba K, and Kamiguchi H., Control of neuronal growth cone navigation by asymmetric inositol 1,4,5-trisphosphate signals. **Science Signaling** 2(79): ra34. (2009)
38. Horikawa K., Yamada Y.(equal contribution to 1st author), Matsuda T, Kobayashi K, Hashimoto M, Matsu-ura T, Miyawaki A, Michikawa T, Mikoshiba K and Nagai T. Spontaneous network activity visualized by ultra-sensitive Ca<sup>2+</sup> indicators, yellow cameleon-Nano. **Nature Methods**, 7(9): 729-32. (2010)

39. Higo T, Hamada K, Hisatsune C, Nukina N, Hashikawa T, Hattori M, Nakamura T, Mikoshiba K. Mechanism of ER stress-induced brain damage by IP<sub>3</sub> receptor. **Neuron** 68(5): 865-878 (2010)
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41. Arizono M, Bannai H, Nakamura K, Niwa F, Enomoto M, Matsu-Ura T, Miyamoto A, Sherwood MW, Nakamura T, Mikoshiba K. Receptor-selective diffusion barrier enhances sensitivity of astrocytic processes to metabotropic glutamate receptor stimulation. **Science Signaling** 5(218): ra27. (2012)
42. Hamada K, Mikoshiba K. Revisiting Channel Allostery: A Coherent mechanism in IP<sub>3</sub> and ryanodine receptors. **Science Signaling** 5(225): pe24. (2012)
43. Drawnel FM, Wachten D, Molkenin JD, Maillet M, Aronsen JM, Swift F, Sjaastad I, Liu N, Catalucci D, Mikoshiba K, Hisatsune C, Okkenhaug H, Andrews SR, Bootman MD, Roderick HL. Mutual antagonism between IP(3)RII and miRNA-133a regulates calcium signals and cardiac hypertrophy. **J Cell Biol.** 199(5): 783-98. (2012)
44. Klar J, Hisatsune C, Baig SM, Tariq M, Johansson AC, Rasool M, Malik NA, Ameer A, Sugiura K, Feuk L, Mikoshiba K, Dahl N. Abolished InsP3R2 function inhibits sweat secretion in both humans and mice **J Clinical Investigation** 124(11): 4773-80 (2014)  
Mikoshiba: corresponding author
45. Tsuboi D, Kuroda K, Tanaka M, Namba T, Iizuka Y, Taya S, Shinoda T, Hikita T, Muraoka S, Iizuka M, Nimura A, Mizoguchi A, Shiina N, Sokabe M, Okano H, Mikoshiba K, and Kaibuchi K. Disrupted-in-Schizophrenia-1 regulates transport of IP3R1 mRNA for synaptic plasticity. **Nature Neurosci.** 18(5): 698-707. (2015)
46. Kawaai K, Mizutani A, Shoji H, Ogawa N, Ebisui E, Kuroda Y, Wakana S, Miyakawa T, Hisatsune C, Mikoshiba K. IRBIT regulates CaMKII $\alpha$  activity and contributes to catecholamine homeostasis through tyrosine hydroxylase phosphorylation. **Proc Natl Acad Sci U S A.** 112(17): 5515-20. (2015)
47. Hisatsune C, Ebisui E, Usui M, Ogawa N, Suzuki A, Mataga N, Takahashi-Iwanaga H, Mikoshiba K. ERp44 Exerts Redox-Dependent Control of Blood Pressure at the ER. **Molecular Cell.** 2015 May 6. pii: S1097-2765(15)00264-6. doi: 10.1016/j.molcel.2015.
48. Bannai H, Niwa F, Sherwood M.W, Shrivastava A.N, Arizono M, Miyamoto A, Sugiura K, Lévi S, Triller A, Mikoshiba K Bidirectional control of synaptic GABAAR clustering by glutamate and calcium. **Cell Reports** 13:1-3 (2015)
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## 2016

- 16-01) Hashimoto M, Nara T, Mita T, Mikoshiba K. Morpholino antisense oligo inhibits trans-splicing of pre-inositol 1,4,5-trisphosphate receptor mRNA of *Trypanosoma cruzi* and suppresses parasite growth and infectivity **Parasitology International** 65(3): 175–179 (2016)
- 16-02) Ujita S, Sasaki T, Asada A, Funayama K, Gao M, Mikoshiba K, Matsuki N, Ikegaya Y. cAMP-dependent calcium oscillations of astrocytes: an implication for pathology. **Cereb Cortex**. 1-16 (2016)  
doi: 10.1093/cercor/bhv310
- 16-03) Nakayama T, Mikoshiba K, Akagawa K. The cell- and tissue-specific transcription mechanism of the TATA-less syntaxin 1A gene. **FASEB J**. 30(2): 525-43 (2016)
- 16-04) Matsu-Ura T, Sasaki H, Okada M, Mikoshiba K, Ashraf M. Attenuation of teratoma formation by p27 overexpression in induced pluripotent stem cells. **Stem Cell Res Therapy** 7(1): 30 (2016)
- 16-05) Sugita M, Yamazaki Y, Goto JI, Fujiwara H, Aihara T, Mikoshiba K, Fujii S. Role of postsynaptic inositol 1, 4, 5-trisphosphate receptors in depotentiation in guinea pig hippocampal CA1 neurons. **Brain Research** 1642: (16) 30163-9 (2016)
- 16-06) Monai H, Ohkura M, Tanaka M, Oe Y, Konno A, Hirai H, Mikoshiba K, Itohara S, Nakai J, Iwai Y, Hirase H. Calcium imaging reveals glial involvement in transcranial direct current stimulation-induced plasticity in mouse brain. **Nature Communications** (2016)  
doi: 10.1038/ncomms11100.
- 16-07) Kim SK, Hayashi H, Ishikawa T, Shibata K, Shigetomi E, Shinozaki Y, Inada H, Roh SE, Kim SJ, Lee G, Bae H, Moorhouse AJ, Mikoshiba K, Fukazawa Y, Koizumi S, Nabekura J. Cortical astrocytes rewire somatosensory cortical circuits for peripheral neuropathic pain. **J Clinical Investion** 126(5): 1983-97 (2016)
- 16-08) Fujii S, Yamazaki Y, Goto J, Fujiwara H, Mikoshiba K. Prior activation of inositol 1,4,5-trisphosphate receptors suppresses the subsequent induction of long-term potentiation in hippocampal CA1 neurons. **Learn & Memory** 23(5): 208-20 (2016)
- 16-09) Staats KA, Humblet-Baron S, Bento-Abreu A, Scheveneels W, Nikolaou A, Deckers K, Lemmens R, Goris A, Van Ginderachter JA, Van Damme P, Hisatsune C,

- Mikoshiha K, Liston A, Robberecht W, Van Den Bosch L. Genetic ablation of IP3 receptor 2 increases cytokines and decreases survival of SOD1G93A mice. **Hum Mol Genet.** 5(16):3491-3499. (2016)
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